

Appl. No. 10/601,596
Amendment dated: August 11, 2005
Reply to OA of: July 13, 2005

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1(original). A clutching mechanism comprising:

at least one elastic layer which is a thin layer with a rim area surrounding a deformable area; two sides of said elastic layer defining an upper surface and a lower surface;

at least two protrusions erected on said lower surface of said deformable area of said elastic layer(s) and extended outwardly; a tip of each of said protrusions defining a clutching point; said clutching points being separated at a predetermined distance;

a supporting mechanism anchored on said upper surface of said elastic layer(s) in said rim area; and

a driving mechanism deforming said elastic layer in a way that said deformable area is sunken inwardly, and thereby said clutching points of said protrusions moving closer to each other within a distance shorter than said predetermined distance.

2(original). The clutching mechanism of claim 1, wherein said elastic layer(s) is made of elastic silica gel materials.

3(original). The clutching mechanism of claim 1, wherein said elastic layer(s) is a round thin layer and said supporting mechanism is a hollow tube, a rim of a cross section of said hollow tube being fixed to said rim area of said upper surface of said elastic layer(s), said protrusions are arranged uniformly in a pattern of an equilateral polygon in said deformable area on said lower surface of said elastic layer(s).

4(original). The clutching mechanism of claim 1, wherein said elastic layer(s) is a rectangular thin layer; said supporting mechanism consisting of two parallel

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rectangular walls anchored respectively along two opposite sides of said rim area on said upper surface of said elastic layer(s); said protrusions being arranged in parallel in said deformable area on said lower surface of said elastic layer(s).

5(original). The clutching mechanism of claim 1, wherein the shape of said protrusions is selected from a group of a cone, a cylinder, a sloped-top cylinder, a rectangular body, and a triangular cone.

6(original). The clutching mechanism of claim 1, wherein said driving mechanism is a vacuum pump.

7(original). The clutching mechanism of claim 1, wherein said driving mechanism is a pair of charged electrodes.

Claims 8-12(canceled).

13(New). The clutching mechanism of claim 1 which is a micro/nano clutching mechanism.